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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,245	12/02/2003	Simon Robert Walmsley	PEA04US	4557
24011	7590	04/14/2006		EXAMINER
				UHLENHAK, JASON S
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
10/727,245	WALMSLEY ET AL.	
Examiner	Art Unit	
Jason Uhlenhake	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 March 2006.
2a) This action is FINAL. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.
4a) Of the above claim(s) 6 is/are withdrawn from consideration.
5) Claim(s) _____ is/are allowed.
6) Claim(s) 1-8 is/are rejected.
7) Claim(s) _____ is/are objected to.
8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook (6,857,724), in view of Teshigwara et al (U.S. Pat. 6,669,331).

Silverbrook discloses:

- ***regarding claim 1***, printer controller (48) for supplying dot data to a printhead (41) in a predetermined order (Column 2, Lines 15 – 52)
- comprising at least first and second printhead modules (46) (Column 3, Lines 53-57) which comprises a plurality of printing nozzles (210) (Column 2, Lines 37-42) and being disposed adjacent each other (Column 8, Lines 43-44)
- printing width of the printhead is wider than a printing width of either of the printhead modules (Column 3, Lines 53-57)

Silverbrook does not disclose expressly:

- ***regarding claim 1***, a printer controller configured to order and time supply of the dot data to the printhead modules in accordance with their respective widths such that a difference in relative widths of the printhead modules is at least partially compensated for

Teshigwara discloses:

- ***regarding claim 1***, a printer controller configured to order and time supply of the dot data to the printhead modules (Column 7, Lines 65 – 67; Column 8, Lines 1 – 16, Lines 28 – 31) in accordance with their respective widths such that a difference in relative widths of the printhead modules is at least partially compensated for (Figures 3 – 4; Column 10, Lines 19 – 42), for the purpose of increasing the speed of printing.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of a printer controller configured to order and time supply of the dot data to the printhead modules in accordance with their respective widths such that a difference in relative widths of the printhead modules is at least partially compensated for as taught by Teshigwara into the device of Silverbrook. The motivation for doing so would have been to increase the speed of printing.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook (6,857,724) as modified by Teshigwara et al, as applied to claim 1 above, and further in view of Hackleman et al (5,719,602).

Silverbrook as modified by Teshigwara et al discloses all of the claimed limitations except for the following:

- ***regarding claim 2***, a printhead modules comprise a plurality of rows of the printing nozzles, the controller being configured to supply the dot data to the rows of nozzles in serial form
- ***regarding claim 3***, a controller configured to serially supply the data to a first row of nozzles , the data being serially clocked through the first for of each pair of rows, then through a second row of each pair of rows, until all printhead nozzles have received their respective data.

Hackelman et al discloses the following:

- ***regarding claim 2***, a printhead modules comprise a plurality of rows of the printing nozzles, the controller being configured to supply the dot data to the rows of nozzles in serial form (Column 5, Lines 34-57) for the purpose of controlling the firing of printhead nozzles as a function of media speed.
- ***regarding claim 3***, a controller configured to serially supply the data to a first row of nozzles , the data being serially clocked through the first for of each pair of rows, then through a second row of each pair of rows, until all printhead nozzles have received their respective data. (Column 5, Lines 34-57) for the purpose of adjusting nozzle time to print, thus the time to complete a print job is less.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of a printhead modules comprise a plurality of rows of the printing nozzles, the controller being configured to supply the dot data to the rows of nozzles in serial form; a controller configured to serially supply the data to a first row of nozzles, the data being serially clocked through the first for of

each pair of rows, then through a second row of each pair of rows, until all printhead nozzles have received their respective data as taught by Hackleman into the device of Silverbrook as modified by Teshigwara et al. The motivation for doing so would have been to increase the speed of printing.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverbrook (U.S. Pat. 6,857,724) as modified by Teshigwara et al (U.S. Pat. 6,669,331) and Hackleman et al (U.S. Pat. 5,719,602), as applied to claims 1, 2 and 3 above, and further in view of Kamoshida et al (U.S. Pub 2002/0075339).

Silverbrook as modified by Teshigwara et al Hackleman et al discloses all of the claimed limitations except for the following:

- ***regarding claim 4***, data is clocked through the second row in a direction substantially opposite to that in which it was clocked through the first row

Kamoshida et al discloses the following:

- ***regarding claim 4***, data is clocked through the second row in a direction substantially opposite to that in which it was clocked through the first row (Paragraphs 0005, 0011).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of data clocked through the second row in a direction substantially opposite to that in which it was clocked through the first row as taught by Kamoshida et al into the device of Silverbrook as modified by Hackleman et al and Teshigwara et al. The motivation for doing so would have been to

improve the efficiency of the printing mechanism and thus improving the quality of printing.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teshigawara et al (U.S. pat. 6,669,331) in view of Noyes et al (U.S. Pat. 6,775,022)

Teshigawara et al discloses:

- ***regarding claim 5***, printer controller comprises non-volatile memory (Column 7, Lines 65 – 67; Column 8, Lines 1 – 6; Column 17, Lines 46 – 62) at least one printhead module, the printer controller being configurable to supply the dot data to a selectable one of a plurality of potential printhead module types, each printhead module type having a different number of nozzles for receiving the dot data (Figures 3 – 4; Column 10, 19 – 42)

Teshigawara et al does not disclose expressly:

- ***regarding claim 5***, non-volatile memory for storing at least one parameter value indicating which of the potential printhead types the printer controller has been configured to supply data to

Noyes et al discloses:

- ***regarding claim 5***, non-volatile memory for storing at least one parameter value indicating which of the potential printhead types the printer controller has been configured to supply data to (Column 15, Lines 1 – 20; Column 18, Lines 34 – 42), for the purpose of improving image quality by taking into consideration print head characteristics.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of a non-volatile memory for storing at least one parameter value indicating which of the potential printhead types the printer controller has been configured to supply data to as taught by Noyes et al into the device of Teshigawara. The motivation for doing so would have been to improve quality by taking into consideration print head characteristics.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teshigawara et al (U.S. pat. 6,669,331) as modified by Noyes et al (U.S. Pat. 6,775,022), as applied to claim 5 above, and further in view of Oshima (U.S. Pub. 2002/0158934).

Teshigawara et al as modified by Noyes et al discloses:

- regarding claim 7, configurable to supply dot data to printhead module on basis of one or more printer module widths (Figures 3 – 4; Column 10, 19 - 42)
- regarding claim 8, configurable to supply the dot data to a plurality of printhead modules, on basis of one or more widths of printhead modules (Figures 3 – 4; Column 10, 19 - 42)

Teshigawara et al as modified by Noyes et al does not disclose:

- regarding claims 7 and 8, printer module widths indicated by at least one parameter

Oshima discloses the following:

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- regarding claims 7 and 8, printer module widths indicated by at least one parameter (Paragraph 0043) for the purpose of providing a printing apparatus and printhead characteristic data selection method, which can appropriately handle printhead characteristic data under various environments.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to incorporate the teaching of printer module widths indicated by at least one parameter as taught by Oshima into the device of Teshigawara et al as modified by Noyes et al. The motivation for doing so would have been to provide providing a printing apparatus and printhead characteristic data selection method, which can appropriately handle printhead characteristic data under various environments.

Response to Arguments

Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection. Please see the above rejections regarding Silverbrook (6,857,724), in view of Teshigwara et al (U.S. Pat. 6,669,331) and Teshigawara et al (U.S. pat. 6,669,331) in view of Noyes et al (U.S. Pat. 6,775,022). They disclose a printer controller that is configured to order and time the supply of dot data according to the widths of the respective printheads. Further they disclose, a non-volatile memory for storing at least one parameter value indicating which of the potential print head types the printer controller has been configured to supply data to.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Uhlenhake whose telephone number is (571) 272-5916. The examiner can normally be reached on Monday - Friday 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JSU
April 7, 2006



K. Foggins 4/06
K. FOGGINS
PRIMARY EXAMINER